

## 8. CONFIGURATION MANAGEMENT

The INEEL has a process in place to maintain configuration management (CM) of the project. The project performs configuration management activities for the safety-significant and commercial grade structures, systems, and components (SSCs), and associated technical baseline documents, within the project scope to ensure that changes are communicated to affected project personnel, and updated on drawings and documents.

Configuration management is an integrated management process that establishes and maintains consistency among design requirements, technical baseline documentation, and the physical configuration of selected SSCs of the project. Maintaining this consistency among design requirements, technical baseline documentation, and physical configuration ensures safety and efficiency. Figure 8-1 illustrates the relationships between design requirements, technical baseline documentation, and physical configuration of the SSCs.

### Configuration Management:

- Ensures changes are:
  - Communicated
  - Approved as necessary
  - Updated on drawings and documents
- Identifies SSCs requiring configuration management
- Documents and controls design requirements and documents
- Manages changes.

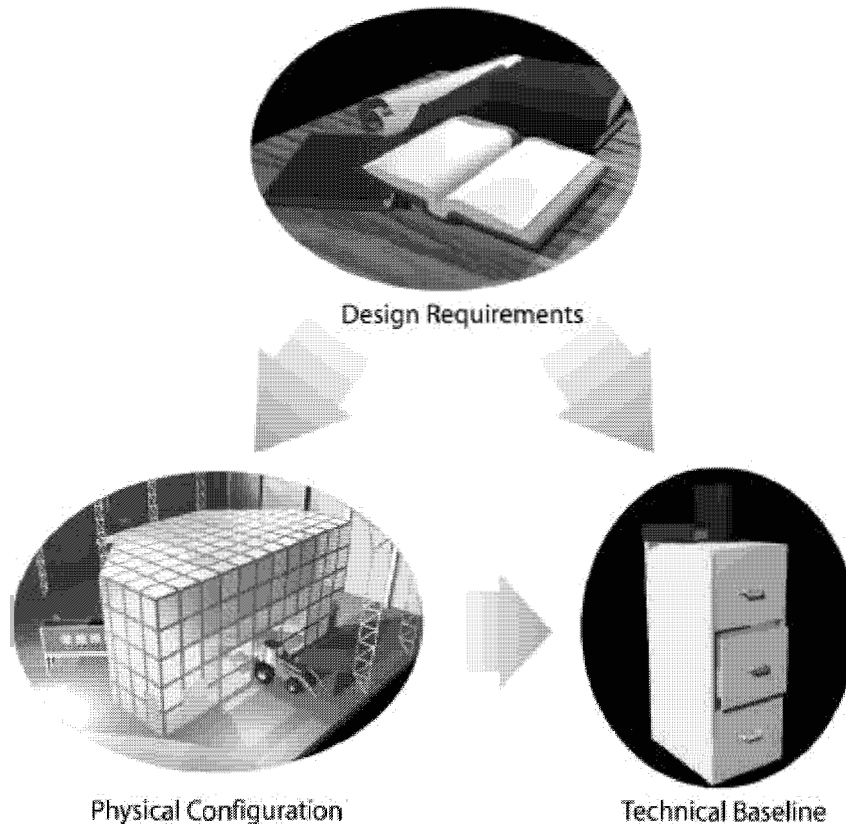


Figure 8-1. Configuration management relationships.

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The project configuration management process ensures that changes are communicated to affected project personnel, approved by the customer, and updated on drawings and documents. This is accomplished by:

- Identifying SSCs requiring configuration management
- Identifying design requirements, drawings, and other documents associated with the SSC.

The project team performs these activities according to reviewed and approved configuration management documents. PLN-996, "Configuration Management Plan for the OU 7-10 Glovebox Excavator Method Project," describes the procedures and processes to implement configuration management effectively. It complies with Program Requirement Document (PRD)-4, "INEEL Project Management System Requirements," and PRD-115, "Configuration Management." Configuration management program principles defined in ANSI/EIA-649, *National Consensus Standard for Configuration Management*, are used in PLN-996.

## 8.1 References

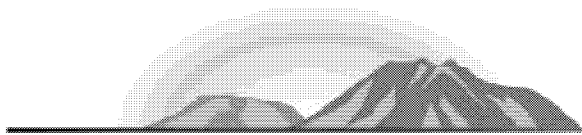
MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

ANSI/EIA-649, *National Consensus Standard for CMCP-540*, "Documenting the Safety Category of Structures, Systems, and Components."

PLN-996, "Configuration Management Plan for the OU 7-10 Glovebox Excavator Method Project."

PRD-4, "INEEL Project Management System Requirements."

PRD-115, "Configuration Management."



## 9. RISK ASSESSMENT AND MANAGEMENT

The project team follows proven, effective processes to assess and manage risk. They identify, analyze, and manage risk while planning the project and continue risk management throughout succeeding project phases. Thus, they improve the success of the project.

Risk is the degree of exposure to an event that might happen to the detriment or benefit of a program project or activity. Risk management is a structured process to handle the potential impact risk has on a project.

### 9.1 Risk Management Plan

The project team developed a detailed risk management plan to efficiently focus on areas of concern and make better-informed decisions. This is PLN-1024, “Risk Management Plan for the OU 7-10 Glovebox Excavator Method Project.” It includes the six key risk management process elements described in Section 9.2 and risk assessment guidance from DOE program and project management practices as well as BBWI GDE-70, Section N, “Project Risk Management.” It addresses significant and greater-than-normal risks. Appendix F provides a summary of the risk management plan, and lists the principal risks identified to date, the overall risk factors, the risk handling strategy, the (post-mitigation) residual risk level, and the residual risk factor.

#### **Risk Assessment and Management:**

- Follows a structured process to handle the potential impact risk has on the project
- Includes six key risk management elements, which form the basis of the “Glovebox Excavator Method Project Risk Management Plan.”

#### **Project Risk Management Plan:**

- Helps project personnel focus on areas of concern and make better-informed decisions.

### 9.2 Risk Management Process

The project team implements six elements in the risk management process. The process is an iterative cycle designed to remain current with project events and detail. The project Risk Management Plan describes the risk management process. Figure 9-1 illustrates the process, and the following subsections summarize it.

#### 9.2.1 Risk Planning

Risk awareness is the first element in managing risk. The project established a risk management team. It comprises the project management team, subject matter experts, and experienced field professionals. The team considered and discussed the potential technical, operational and programmatic greater-than-normal risks of the project following guidance in INEEL MCP-9106, “Management of INEEL Projects,” and “DOE Project Management Practices” (Draft), Practice 8, Risk Management.

#### 9.2.2 Risk Identification

Risk identification is the next element in managing risk. The risk management team used the Risk Identification Checklist in GDE-70 to screen for significant project risks. They reviewed an earlier preconceptual risk evaluation, an overview report about the glovebox excavator method and other processes, and an initial cost estimate. From those reviews they identified potential project risks. In addition, they coordinated with stakeholders to ensure they included the latest risk possibilities. They then summarized these historical and recent risks in draft risk statements. Finally, the risk management

team evaluated and expanded the draft risk statements to more precisely describe the project risks of concern.

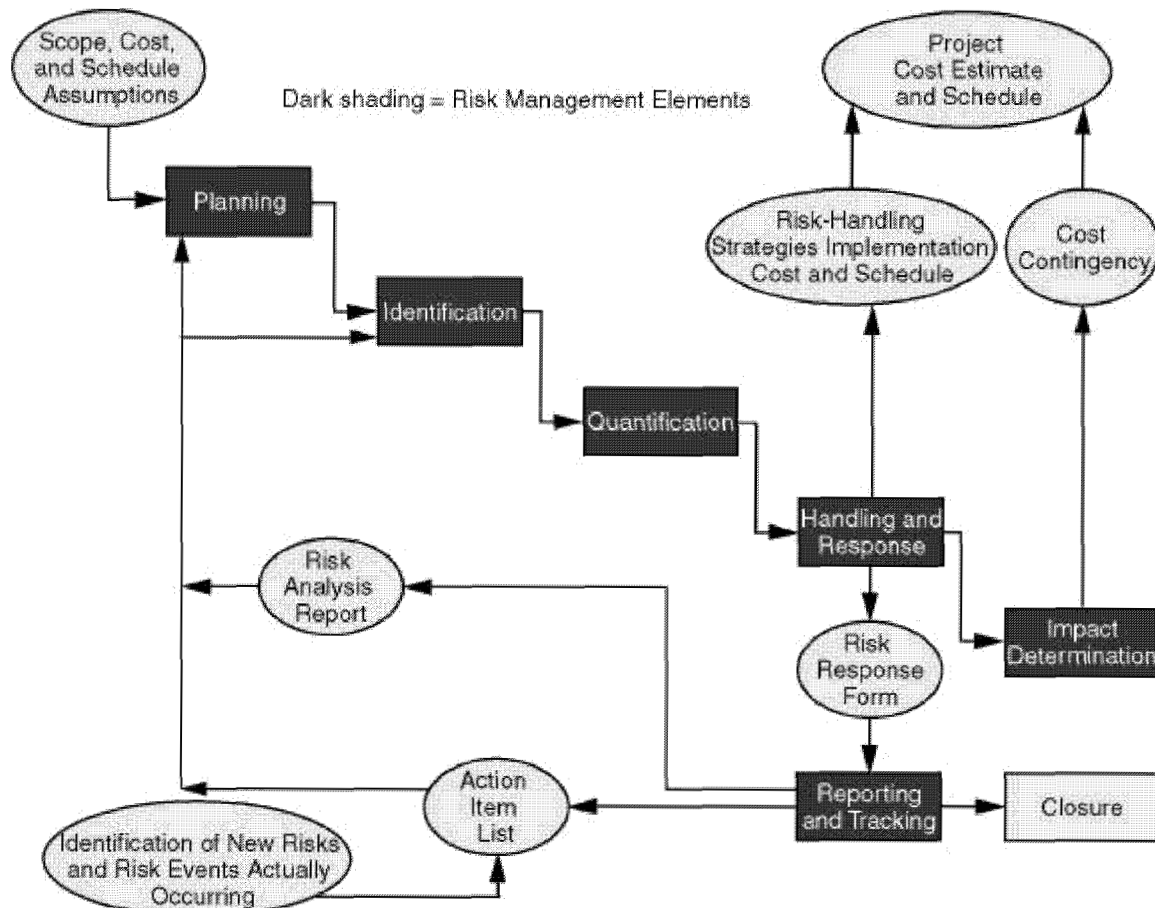


Figure 9-1. Risk management process.

### 9.2.3 Risk Quantification

Next, the risk management team quantified project risks. Risk is quantified by the probability that the risk event will occur and by the consequences of that event. The risk management team used structured risk statements and consensus probability and consequence criteria to estimate project risk as a “risk factor.” They calculated the risk factor as “probability  $\times$  consequence.” Then they translated the risk factor to a qualitative risk level. They used the resulting qualitative risk level to determine each specific risk-handling strategy.

### 9.2.4 Risk Response

Risk response (also termed risk handling) is an important element in managing risk. It is the identification of a course of action or inaction to effectively manage a given risk. For each moderate or high risk, the risk management team developed a specific risk-handling strategy to reduce the likelihood and/or reduce the severity of the risk if it occurs. Figure 9-2 shows the risk-handling approach the team

followed. To ensure the success of the risk response, the project manager assigned a risk owner to monitor an assigned risk, report status, and ensure the risk is managed according to the specific strategy developed.

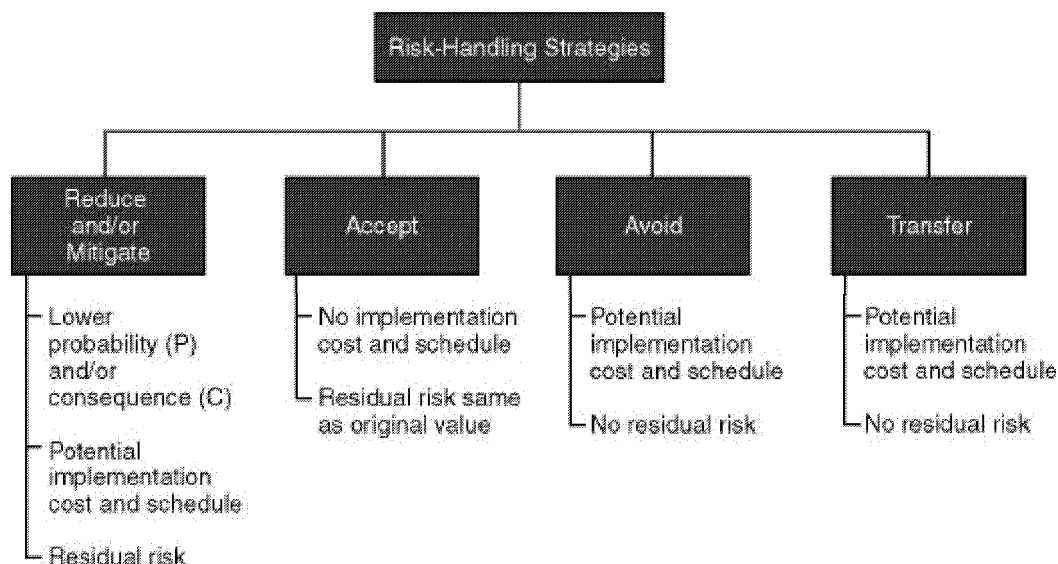


Figure 9-2. Risk-handling strategies.

### 9.2.5 Risk Impact Determination

The next element in managing risk is determining risk impact. First, the risk management team quantified the cost of risk management. They estimated the cost of risk handling, which must be added to the project baseline (assuming adoption of the risk-handling strategy). They also determined the resulting residual risk factor, which is considered in project contingency. The residual risk is the risk expected to remain after the specific risk-handling strategy is carried out.

After quantifying the cost of risk management, the risk management team evaluated the efficiency of risk management actions. Risk management efficiency is quantified as the difference between the risk factors before and after a risk-handling strategy is implemented. They recorded the risk-handling strategy for each risk, including cost and risk information, on INEEL Form 410.06, “Project Risk Identification and Response Plan,” according to GDE-70.

### 9.2.6 Risk Reporting and Tracking

Risk reporting and tracking is the final element in managing risk. The project risk management plan describes the project risk management process and how the project reports and tracks risk.

Risk reporting includes documenting identified risks, quantifying risks, risk response, and determining risk impact. As the project progresses, the project team reports current risks in the Risk Analysis Report, which is used to update the project risk management plan.

Risk tracking includes actively monitoring action items developed from the risk response and evaluating new risks or reevaluating previously identified risks. The project team actively tracks risk management action items in the short term in the Project Action Item List. In addition, they initiate a

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project schedule activity for high risks, track moderate risks in the Project Action Item List, and status existing risks and introduce new risks during regular project coordination meetings.

### **9.3 References**

MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

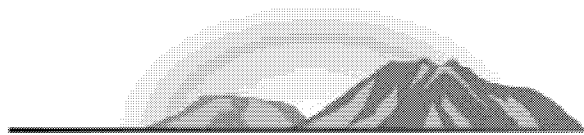
DOE O 413.3, “Program and Project Management for the Acquisition of Capital Assets.”

DOE, 2000, “DOE Program and Project Management Practices” (Draft), *Practice 8, Risk Management*.

GDE-70, Section N, “Project Risk Management.”

MCP-9106, “Management of INEEL Projects.”

PLN-1024, “Risk Management Plan for the OU 7-10 Glovebox Excavator Method Project.”



## 10. QUALITY ASSURANCE

### 10.1 Quality Assurance Requirements

This section addresses quality assurance (QA) processes critical to the Glovebox Excavator Method Project. Specifically, the section addresses how quality will be ensured during the following project phases:

- Design
- Construction
- Operations.

This section cites guidance documents and requirements that establish the quality baseline. These documents include 10 CFR 830, Subpart A, “Quality Assurance Requirements” (Price Anderson Amendments Act), and DOE-ID O 414.A, “Quality Assurance.” These guidance documents list requirements that must be met to satisfy our customers and stakeholders, DOE-ID, the State of Idaho, and the EPA. This project is classified as a nonreactor nuclear facility. The design, construction, and operation of this demonstration retrieval project is done in accordance with applicable laws and regulations so that the overall project is successful and accomplishes what was planned.

Quality Assurance
<ul style="list-style-type: none"><li>• Uses the same highly effective quality program as currently used by other ER projects</li><li>• Bases requirements for each phase (design, construction, operations) on the risk level</li><li>• Ensures appropriate quality levels for the project through use of the “nine-block” process</li><li>• Uses resources cost-effectively.</li></ul>

### 10.2 Quality Assurance Program Implementation

The Quality Program applicable to the project will be the same highly effective program currently used by other ER projects, construction management, and the INEEL. The project determined that a project-specific Quality Program Plan (QPP) will not be needed.

INEEL requires that inspection plans contain sufficient information for the inspection to be performed without the inspector having to make judgment calls. In addition, construction interface documents and other planning and construction documents are revised and approved by the proper office.

The different phases of the Glovebox Excavator Method Project may call for different levels of quality based on the level of risk to people and the environment. This section defines the applicable levels of QA, and the process for determining these levels. In particular, this section discusses the “nine-block” process presented in Appendix D of MCP -9106, “Management of INEEL Projects.”

Details regarding the Construction Quality Program are provided in section 11.5.4.

#### 10.2.1 “Nine-Block” Matrix

The “Nine-Block” matrix is a reference tool that allows the project team to evaluate and apply the appropriate quality levels for construction execution, based on evaluation of construction and operations interface risk. It is flexible by design. The project team works together in the decision process during the

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conceptual phase of the project. The project team uses the Operations Interface Factors table (see Appendix D of MCP-9106) to select an interface level and the Construction Safety Risk Factors table to select a risk level; these determine which attributes are most appropriate for the planned construction scope. They then go to the Commercial Practices Graded Application Matrix (the nine-block matrix) and select the appropriate block. The results of this evaluation are provided in Section 11.5.4.

### 10.3 References

MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

ASME NQA-1-1997, "Quality Assurance Requirements for Nuclear Facility Applications."

10 CFR 830, Subpart A, "Quality Assurance Requirements."

10 CFR 830.120, "Nuclear Safety Management."

DOE-ID, 2000, *ER's Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10 and Inactive Sites*, DOE/ID-10587.

DOE-ID O 414.A, "Quality Assurance."

DOE G 414.1-2, "Quality Assurance Management System Guide."

DOE O 414.1A, "Quality Assurance."

INEEL, Manual 13 A – "Quality and Requirements Management Program Documents."

LST-200, "QAPRD Implementing Document Reference List."

MCP-9106, "Management of INEEL Projects."

PLN-920, "Project and Construction Management Quality Program Plan."

PRD-5071, "Quality Assurance Program."